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AUTHOR Ellett, Frederick S.
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ABSTRACT

The concern of this essay is with issues which are involved in the likely consensus among educational researchers that a formal decision theory should be used to determine whether an educational policy--such as selection procedure--is justified. It is argued in Section I that reliance upon decision theory is unwarranted. In Section II, a characterization of the features of the decision theory approach is given, as is an explanation of why more writers are coming to endorse, or exhibit reservations about, the approach. Two of the specific applications of the decision theory which have been recommended are discussed, and criticisms of these applications are presented. Sections III and IV deal with the decision theory at a more general and abstract level. Those concerned with the criticism and evaluation of educational policy are urged to begin to investigate the strengths and limitations of various reformative (or stipulative) definitions. (Author/GK)

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STUDIES IN EVALUATION AND DECISION MAKING

Work Unit 3

Philosophic Inquiry into Evaluation

Frederick S. Ellett, Project Director

Decision Theory, Rationality, and Moral Justice

Frederick Ellett

(This deliverable is submitted in fulfillment of work proposed as "Report V: The Point and Performance of Evaluation")

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Decision Theory, Rationality, and Moral Justice

I

Educational researchers and psychometricians have been moving towards a consensus in their efforts to answer the question of whether a test used in selection procedures is fair or unbiased. Although much of the discussion is about the fairness of selection procedures used at colleges and universities, similar problems arise in selection for employment. The problems under discussion, therefore, have serious implications for social policy. The consensus position holds that (formal) decision theory is the only way to answer the question, for decision theory describes adequately the principles of rationality and the principles of moral justice.

In this essay I argue that such reliance upon decision theory is unwarranted. In Section II, I give a characterization of the features of the decision theory approach, and I explain why more and more writers are coming to endorse, at least in part, the approach and draw out the reservations some writers have to it. Next I discuss two of the specific applications of the decision theory which have been recommended, and I present some criticisms of these applications. Sections III and IV deal with the decision theory at a more general and abstract level. In Section III, I argue that the formal decision theory cannot adequately describe or capture the principles of rationality. I also argue that the complete resolution of these problems must await a defensible reformative or stipulative definition of "rationality," for the current use of th term is ambiguous. In Section IV, I argue that the decision theory cannot adequately describe or capture the principles of moral

justice (or fairness). I also argue that the resolution of these problems must await a defensible reformative or stipulative definition of "moral justice," for the current use of the term is ambiguous. I conclude by urging that those concerned with the criticism and evaluation of educational policy begin to investigate the strengths and limitations of various reformative (or stipulative) definitions.

II

The Decision-Theory Viewpoint

Whether a particular test used in a selection process is fair or unbiased towards all applicants is a question which has rightly received considerable attention during the last decade from admissions officers, lawyers, philosophers, educational researchers, and psychometricians. For a long time, there has been disagreement about which of several views stated the proper condition for the fairness of tests. (For example, Anastasi, 1968; Cleary, 1968; Cole, 1973; Cronbach, 1976; Darlington, 1971; Linn, 1975a, 1975b, 1976; Petersen & Novick, 1974, 1976; Thorndike, 1971.)

In the light of such disagreement, several writers have put forward the decision theory as the way of answering the question.[1] Petersen and Novick, building upon the work of J. Von Neuman and O. Morgenstern (1947) and A. Wald (1950), were among the first to bring the decision theory to bear on the issue of test fairness. For example, they have suggested that there is a connection between rational choice and decision theory:

> In the theory of the rational-economic man, developed in these writings, when all probabilities of outcomes are assumed known . . . , there is a simple paradigm required for rational decision. In that paradigm

> the desirability or utility of each possible outcome is stated quantitatively. Then, given all available information concerning the person in question, the probability of each possible outcome is stated for each decision under consideration. Next, for each possible decision, the utility of each outcome is multiplied by the probability of each outcome and the products are summed to provide an expected utility. Finally, that decision is then made for which the expected utility is highest. (1976, p. 25)

Here is perhaps a more common and precise description of the principles of rational choice according to decision theory:

> 1. When we first encounter him in the decision-making situation, he [the decision-maker] already has laid out before him the whole set of alternatives from which he will choose his action. . . .
> 2. To each alternative is attached a set of consequences.
> 3. At the outset, the decision-maker has a "utility function" or a "preference ordering" that ranks all sets of consequences from the most preferred to the least preferred.
> 4. The decision-maker selects the alternative leading to the preferred set of consequences. (March & Simon, 1958, p. 137. The authors do not accept the model.)

It should be noted that the "consequences" in question are to be graded according to their expected utilities, as measured by the product of the utility in view and the subjective probability of achieving it. The important point is that these writers hold that decision theory adequately describes the principles of rational choice.

Novick and Petersen also have gone on to claim that decision theory can adequately describe the principles of moral justice (or fairness):

> It would seem that there can be no distinction between maximizing expected utility and strategy fairness. The second concept is strictly subsumed under the first. (1974, p. 45. See also Novick & Petersen, 1976, p. 77.)

In their view, then, decision theory describes not only the principles of rationality, but also the principles of justice (or fairness).

Other noted educational researchers and psychometricians also seem inclined towards the decision-theoretic approach. Robert Linn has written that the lack of general agreement on what constitutes fair test use creates real discomfort for anyone who would like to have a well-specified set of procedures to follow in order to insure fairness (1975b, p. 40). Linn went on to say that the general desire for a definite and mechanical answer may, in fact, be part of the problem; however, the question of what constitutes fairness or how admissions decisions should be made (in order to insure fairness) for members of different groups apparently is not amenable to a strictly technical solution (p. 40).[2] As one tries to resolve these issues, Linn found that in deciding how to pursue the goal of increasing the number of minority persons in law schools and the goal of admitting to the law school those students with the highest probability of excellent academic performance, it is necessary to look beyond a technical resolution of the selection problem. Competing values must be weighed (p. 40). Linn has claimed that the decision-theoretical approach is useful in these situations because the decision-theoretic models provide a formal procedure for taking values into

account (1975a, p. 194). According to Petersen and Novick, the advantage of this model is that it requires an explicit public statement of utilities for each subpopulation. If I do not like the utilities you provide, an informative debate will no doubt ensue, with neither of us claiming any axiomatic justification of our utilities. The important thing is that the discussion be public with all interested parties participating in the debate (1976, p. 28). It is claimed, however, that the decision-theoretic approach has a rather special advantage. Linn stated that the most satisfactory means to weigh competing values explicitly is to formulate the admissions problem in decision-theoretic terms (Linn, 1975b, p. 41; Novick & Petersen, 1976, p. 86).

Some have pointed out that there are certain unresolved difficulties with the approach, while still accepting the approach as generally right. For example, Lee J. Cronbach has warned, "Make no mistake. The issues will not be settled by mathematical specialists. Utility theory cannot crank out a <u>just answer</u> to a question of resource allocation, when the parties with conflicting interests do not agree on the payoff matrix to be used or when the payoffs of the parties cannot be averaged" (1976, p. 31). And as Linn noted, it must be recognized that procedures for involving different interest groups in the process, for translating value judgments into utilities, and for adjudicating differences in utilities assigned by different groups will be needed (Linn, 1976, p. 56). Apparently, although the value judgments are subjective, once these judgments are known and agreed upon, the decision-theoretic approach can <u>calculate</u> the solution. A similar point has been made by Novick and Ellis:

> Different decision-makers will likely have different utilities. Presumably, the utilities of the applicant will differ from those of the institution. . . . To implement the theory, it may be necessary to arrive at an agreement concerning utilities or to decide that one person's should determine the issue. However, it may not. Petersen (1976) has demonstrated that two widely different utility functions will lead to the same decision for many applicants. (1977, p. 319)

They went on to note that:

> When it is necessary to resolve differences in utilities, various techniques are available . . . it is necessary to study proffered utilities, to discover and remove discomforting implications (incoherencies) by modifying the stated utilities and to obtain some degree of consensus among those concerned. (p. 319)

It is also recognized that there may be some difficulties with decision theory's assumption of "additivity." As Linn has noted, in the standard approach used in decision theory it is assumed that the utility of an outcome for one individual does not depend on what happens to other people. This is known as the assumption of additivity and is used in the threshold utility model by Gross and Su (1975). It may sometimes be more realistic, however, to allow the utility for one individual to depend on who else is selected (1975a, pp. 199-200). Cronbach has written that alternative axiom sets can embody views so divergent as to defy comparison. Although weak, nonadditive axioms are much used in economic decision theory, every paper in the psychometric literature relies on the strong additive axiom (1976, p. 41). Thus, certain writers have pointed to certain unresolved difficulties for the approach.

Petersen and Novick have, however, expressed the growing viewpoint:

> It is our contention that most decision problems in education, and in many other areas, including employment selection, should be approached through a thoroughly formal decision-theoretic approach. (1976, p. 86)

Novick and Ellis have put the matter this way:

> While there is certainly no consensus in support of the particular decision-theoretic formulation discussed by Petersen and Novick (threshold utility) and criticized by Novick and Petersen (1976) . . . there does seem to be an evolving consensus in support of the use of decision-theoretic methods. . . . (1977, p. 320)

It should be clear, then, that various writers are coming to share the view that decision theory should be used to analyze educational policies and that the theory describes the principles of rationality and the principles of (moral) justice. Anyone seriously interested in policy criticism must pay attention to a view which captures these principles.

Specific Applications

Let us quickly consider two specific ways in which (formal) decision theory would be applied to determine what is a fair selection procedure.

The threshold utility strategy. There may be situations in which an institution is legitimately interested in distinguishing between those applicants whose performance will be successful within the institutional setting and those applicants whose performance will not be successful. For example, one might set a minimum level of criterion

performance so that the institution would find its purposes (best) served if all of those whose qualifications fell above the minimum were treated in the same manner, and all of those whose qualifications fell below the minimum were treated in the same manner. Ideally the institution would like to accept those who are above some performance minimum and reject those below some performance minimum. Also, the institution assigns values (or utility or desirability) for each group (e.g., the majority and the minority) to each of the four selection outcomes: accept the qualified, accept the not-qualified, reject the qualified, and reject the not qualified. Given the probabilities based on the criterion-test relationship, the selection ratio, the number of applicants, and the number of positions, the institution then tries to find the test score cut point for each group which will maximize the expected utility. The test score cut point divides the applicants into those who will be accepted and those who will be rejected (on the basis of test scores). The selection procedure is fair if the expected utility of the final decision is the same for each group (Petersen & Novick, 1974, p. 41; Petersen & Novick, 1976; Linn, 1975a, p. 196; and Linn, 1975b, p. 41).

The expected utility strategy. Having "determined" the probabilities and utilities, the institution computes the average or expected utility for each person and then selects that person whose performance has the higher expected utility. The selection procedure is fair if people who have the same expected utility are treated the same (that is, either rejected or accepted). Consider the following example for applicants A and B (see Table 1). Notice that B's utilities are higher than A's utilities. The test user (i.e., the institution) has placed extra value

on B's being disadvantaged, say Novick and Ellis (1977, pp. 318-319; and also Cronbach, 1976). One then calculates that A's expected utility is .530 while B's expected utility is .545, and therefore one concludes that B should be chosen instead of A (see Table 1). Novick and Ellis explain that the different utilities for applicants A and B are due perhaps to different levels of prior disadvantage (1977, p. 319). Apparently the differences reflect the application of the principle of just compensation.

Insert Table 1 about here

Specific Criticism

The threshold utility strategy. According to this strategy, the institution is interested in distinguishing between those who are, say, suitably qualified and those who are not suitably qualified. The test score cutting point for each group draws the boundary line between the test scores for applicants who are accepted and the test scores for applicants who are rejected. Also, the values (or utility or desirability) are (subjectively) attached for each group to each of the four outcomes (accept a suitably qualified, accept a not suitably qualified, reject a suitably qualified, reject a not suitably qualified). Given the selection ratio, the number of applicants, and the number of positions, then the expected utility is maximized by adjusting the test score cut-points for each group. The relevant probabilities are based on the criterion-test relationship in terms of predictive validity, so perhaps some of the probabilities need not be subjective.

Table 1

Illustration of the Expected Utility Strategy

	Criterion Performance Outcomes			
	Unsatisfactory	Satisfactory	Very Satisfactory	Exceptional
Applicant A				
Probability of Achieving Criterion	.20	.25	.30	.25
Utility	0	.50	.60	.90
Applicant B				
Probability of Achieving Criterion	.30	.35	.25	.10
Utility	.10	.70	.80	1

Suppose that such utilities have been taken into account. Suppose that the cutting points have been found which maximize the expected utility, and that the expected utility is the same for each group. Is the selection procedure fair? Does such a strategy give us a general description of the principles of fairness? Given certain situations, I believe the recommendation does capture some of our moral intuitions, for we do believe that fairness requires some kind of due compensation. Yet I believe the recommendation does not seem to honor another of our moral intuitions that those who are equally qualified (according to the criterion) should be treated equally. For it is quite unlikely that giving due compensation in the selection process will result in treating equally those who are equally qualified. Thus, as a general account of intuitions about fairness, the recommendation has left something out. And, also, there are deep problems here to which I will later turn.

Another problem with this application of decision theory to selection procedures is that the threshold-utility strategy really accomplishes only intrapolicy optimization. The optimization presupposes that the criterion-test relationship is to form a legitimate part of the selection procedure. But, whether the criterion-test relationship should itself be used is also open to determination by decision theory. For example, the decision theory requires that the consequences of a policy which used the criterion-test relationship be compared with the consequences of alternative policies and, in particular, with the consequences of the open admissions policy to see which has the greater expected utility. And although the open admissions policy would have lower efficiency, it might well be (more) fair and less expensive to administer. If institutions of higher education had open admissions policies, then high

school students might view their going to college in a different light. For one thing, fierce competition would not help one get into college. Of course, a student would be well advised to be prepared for the possible opportunity. Also, the widespread use of open admissions might provide scientifically useful data about colleges and students, since the students would be selected by lot. Hence, when all the alternatives are considered, the open admissions policy might win out. The point here is that, on the principles of decision theory, not only should intrapolicy procedures be evaluated, but all alternative policies (and strategies) should be evaluated. The policy which is "justified" by the principles of decision theory is the one which maximizes the expected utility. It may well be that the open admission procedure would lose out to the current policies that use the criterion-test relationship, but this has to be shown by collecting the empirical evidence and calculating the relevant expected utilities. It is an important premise which cannot merely be conceded without argument. Indeed it would be interesting to see how open admissions compare to the current policies. If the expected utilities were reasonably close, the fact that open admission is (more) fair may decide the question in favor of open admissions.

The expected utility strategy has the same assumptions and presuppositions as the threshold-utility strategy, except that it would not divide the applicants into a group whose scores were above the cutting point and into a group whose scores were below it. The expected utility strategy would evaluate each applicant with respect to his probability of achieving various criterion scores, given that he has a certain test score. Again, it can be shown that the expected utility strategy is

subject to the same difficulties as the threshold-utility model; it violates the principles of equal treatment for those equally qualified. Thus, the expected utility strategy provides us with neither a necessary nor a sufficient account of fairness.

III

Decision Theory and Rationality

Turning from offering criticism of the specific recommendations based on decision theory, I would now like to offer some general remarks about the application of decision theory to questions of rationality and justice. An adequate discussion of decision theory would clearly require much more space than the amount I shall devote to it in this essay, so my discussion will provide only a glimpse of some of the important issues concerning the application of decision theory. I shall point out, however, certain *prima facie* problems that a more adequate discussion should take into account before decision theory can be applied in the name of rationality or justice.

It is helpful here to distinguish among technical, reportive (or descriptive), and semi-stipulative definitions of "rationality."

First, let me explain the technical use. It may be that economists can enrich their economic theory by stipulating that rational behavior is that behavior in which the agent maximizes his expected utility. For example, when Lange says that "a unit of economic decision is said to act rationally when its objective is the maximization of a magnitude," he is stipulating the definition of the technical term "rational behavior" (1945, p. 30). Such definitions may enable economists to discover new and broader generalizations about the economic behavior of people in society. Also, economists may find it useful to adopt general postulates.

For example, "the postulate of rationality is the assumption that all units of economic decision act rationally" (p. 30). Lange writes that this assumption is "a most powerful tool for simplification of theoretical analysis" and that it is "a short-cut to the discovery of laws governing the decisions of units and to the prediction of their actions under given circumstances" (p. 30). In such situations, one's use of the term "rationality" is justified insofar as the term is helpful in developing and advancing economics as an empirical science. That the actual behavior of people who are described as rational in an ordinary sense may not be adequately described as cases of maximizing one's expected utility is irrelevant when one is considering the term's status in certain kinds of scientific inquiry. The technical term is introduced in a theory for purposes of explanation and prediction. That the technical term "rationality" is logically distinct from the ordinary uses of "rationality" should not be surprising when one realizes what the theoretician is trying to do.[3]

Some writers, however, seem to believe that it is an empirical generalization that rational behavior--"rational" in some ordinary sense--is behavior in which a person maximizes a magnitude (Lange, 1945, p. 30). The remarks by Petersen and Novick quoted earlier suggest that such a general empirical relationship holds between rationality and maximizing one's expected utility. Thus, they appear to be using the term "rationality" in a descriptive way. Before one can determine whether such empirical claims are justified, however, one needs an adequate, logical analysis of the ordinary uses of "rationality" so that the scientist can go out and see if the empirical relationship holds. Useful attempts have been made by Mortimore (1976, Chs. 4, 15) and

Richards (1971) to give a reportive or descriptive definition of "rationality."

It is quite important, however, to notice that it has been seriously questioned whether there is a single, coherent definition of "rationality" which honors ordinary and traditional use. It turns out that the term "rationality" alludes to a vast range of topics. In view of these facts, Max Black has argued that rationality needs a semi-stipulative definition (1975a, p. 129). Black has written that:

> To judge from the freedom with which "rationality" and its cognates "rational," "reason," "reasonableness" have been used in the past, these words might be supposed to have sufficiently firm meanings to render unnecessary any explicit definitions of their intended meanings. (1975a, p. 129)

This is so far from being the case, Black has argued, that:

> Failure even to attempt such definitions has done more than anything to obfuscate the issues. Yet, writers who have supplied definitions of "rationality" have too often adopted arbitrary or idiosyncratic definitions. (1975a, p. 129)

Black concluded that, given the checkered history of uses of "rationality" and its cognates, any definition that is sufficiently definite to be useful must be partly stipulative, however much it tries to respect the tradition (1975a, p. 131). It follows, then, that anybody undertaking to provide a definition or analysis of "rationality" is making a proposal and taking sides in an important intellectual controversy (1975b, p. 6). Black went on to suggest, borrowing a useful idea from W. B. Gallie, that we call "rationality" an "<u>essentially contested notion</u>":

> This word and its cognates are almost always accolades of approval; it is a strong mark of esteem to be deemed to have chosen rationally. But there have long been strenuous disagreements about the proper basis for such praise: competing and opposed traditions still contest the possession of this important honorific. (1977, p. 65)

In answering the question how should the term be used, Black has argued that it would be helpful to start with the formula that action in the face of uncertainty or risk shall count as rational to the extent that it is supported by the agent's good reasons (1977, p. 67). In defense of his formula, Black has argued that it preserves certain laudatory aspects of "rationality" and that "good reasons" has the advantage of being more specific and less mysterious than "rationality" (1975a, pp. 131-132; 1977, p. 67). Of course, as Black has acknowledged, what counts as a "good reason" is itself a controversial matter. I leave further discussion to another time.

Kurt Baier, a noted moral philosopher, has come to similar conclusions. He has criticized the widespread Humean conception of rationality which holds that rationality can only determine whether one has chosen the right means to given ends, but can say nothing whatsoever about the ends (Baier, 1978; see also Black, 1977, p. 65). Baier has argued that that conception of rationality is too narrow and that a broader conception is needed and can be defended. Also, Richard Brandt has raised the same kind of questions and has also argued in favor of a different, "reforming" definition. Since the term "rationality" does not have any definite meaning in ordinary use, Brandt has said, the only serious question is what it might helpfully be employed to mean. Brandt has claimed that

relatively few philosophers actually engage in giving reportive or descriptive definitions. Most philosophers who offer definitions of normative terms offer rather "reforming" definitions, although normally they leave unexplained the course of reasoning they might use to support the definitions they adopt (1979, pp. 5, 10-15, 22).

In the light of these remarks, an adequate, defensible semi-stipulative (or reforming) definition of "rationality" must be produced before we can engage in relevant empirical studies of "rationality." It also appears that educational policy analysis and criticism awaits such a definition of "rationality." Given the frequent employment of the term "rational" as a term of approval of educational policy and programs, educational philosophers have the obligation to describe the particular ways the term is being employed and, more importantly, to determine whether a coherent, defensible definition lies behind such usage. If the use of the term is confused and incoherent, the philosopher should urge that a defensible definition be adopted. Those who are interested in the criticism of educational policy should debate the strengths and limitations of various stipulative definitions in an effort to find one that is defensible.

Even though there are important issues surrounding the use of the term "rationality," one can still argue that whatever one's view of rationality (within a range), it is impossible that decision theory can illuminate its central principles. The remarks by Richard Jeffrey explain this quite well:

> To deliberate is to evaluate available lines of action in terms of their consequences, which may depend on circumstances that the agent can neither

> predict nor control. . . . In the Bayesian model the agent's notions of the probabilities of the relevant circumstances and the desirabilities of the possible consequences are represented by sets of numbers combined to compute an expected desirability for each of the acts under consideration. The Bayesian principle for deliberation is then to perform an act which has maximum expected desirability. . . . The Bayesian model may be as applicable to the deliberations of a knave or a fool as to the deliberations of a good and wise man, for the numerical probabilities and desirabilities are taken to be subjective in that they reflect the agent's actual beliefs and preferences, irrespective of factual or moral justification. (1965, p. 1)

Another noted theorist, John Harsanyi, has said:

> [Modern] utility theory hardly tells us more than the implications of the assumption that people maximize whatever they maximize, and game theory tells us what happens if several people acting consistently are at the same time trying to maximize whatever they are trying to maximize. (1966, p. 18)

Benn and Mortimore make a similar point when they argue that the technical models of rational choice give no importance to whether the agent's postulated substantive ends are in any sense rational or not (1976, p. 190).

The thrust of these remarks is that decision theory is not a theory of rationality at all, but rather that it is at best a theory of deliberation. This is an important point which needs emphasis. Such a theory makes no distinction between the deliberations of a fool and the

deliberations of a good or wise man, but gives a rather formal or abstract theory of deliberation. Hence, the theory is quite remote from the practical and ethical realities of the world. Additional principles are needed to specify and distinguish between irrational and rational deliberation, for maximizing one's expected utility is compatible with acting quite irrationally. Decision theory is not a theory of rationality, but at best a theory of deliberation.

Some people have held, as does Howard Raiffa, that decision theory does not present a descriptive (or empirical) theory of actual behavior, but that the theory prescribes how to act in a reasonable and practical way (i.e., a rational way). Raiffa has written that:

> The so-called Bayesian viewpoint uses (subjective) utilities and subjective probabilities . . . but the theory is not a <u>description</u> theory of actual behavior. . . . Rather the approach <u>prescribes</u> how an individual who is faced with a problem of choice under uncertainty should go about choosing a course of action that is consistent with his personal basic judgments and preferences. He must consciously police the consistency of his subjective inputs and <u>calculate</u> their implication for action. (1968, pp. x-xi)

According to this view, then, people are not behaving in a way which maximizes their expected utility, but people <u>ought</u> to do so.

But why should they do so? Raiffa has suggested that it would be a reasonable and a practical way of acting. Here one should recall the previous remarks of Jeffrey, Harsanyi, Benn, and Mortimore--decision theory cannot distinguish between the deliberations of a knave or a fool and the deliberations of a good and wise man. The utilities (or

desirabilities) and the probabilities are taken to be subjective in the sense that they reflect the agent's actual beliefs and preferences, irrespective of factual or moral justification. A theory which cannot make such distinctions surely has but limited value in providing practical guidance for the way we should act. If the theory is to be used to provide practical guidance, the theory will need to be supplemented with principles which bring it into touch with the realities of decision-making in the world.

Others have gone further by arguing that there is an additional reason why the decision-theoretic approach cannot provide an adequate model for rational behavior. David A. J. Richards has argued that in the process of deliberation it is normally impossible, given the costs of prolonged decision-making, to consider all the possible alternative plans and to choose the maximal one in light of all the relevant facts (1971, p. 46). For as Herbert Simon has suggested, a rational person is not required to find the maximal alternative but only one which is satisfactory. An alternative is satisfactory if (1) there exists a set of criteria that describes the minimally satisfactory alternatives, and (2) the alternative in question meets or exceeds all the criteria (1957, p. 204). Black has argued that judgments about an action's reasonableness are typically <u>comparative</u>; if we can sometimes say that one action is more reasonable than another, we are very seldom able to choose a single action as <u>uniquely</u> reasonable (1972, p. 52). (Such a view is relevant to questions about the nature of rationality because reasonableness is closely related to rationality.) It is important to determine whether this objection can be sustained. For one might argue that when people accept a plan which meets rather loose criteria of being good enough, it

is accepted because there is background information that other plans are likely to be only slightly better and that it is not worth the time to canvass possibilities further. When one takes into account such information and search costs, the process of deliberation may well deserve to be called rational after all (see Tisdell, 1976, pp. 199, 203ff).

My conclusions at this point are: (1) that formal decision theory cannot adequately describe the principles of rationality, and (2) that policy analysis and criticism must await a defensible semi-stipulative (or reformative) definition of "rationality." Those interested in the criticism of educational policy should begin considering the strengths and limitations of various stipulative definitions.

IV

Decision Theory and Moral Justice

As I have noted earlier, various writers have claimed that decision theory adequately describes the principles of justice (or fairness). In particular, Petersen and Novick have claimed that there can be no distinction between maximizing expected utility and strategy fairness. The second concept is strictly subsumed under the first (1974, p. 45).

Again, two kinds of questions arise in evaluating the claim about decision theory describing the principles of moral justice. First, given that formal decision theory relies on subjective preferences, desires, and beliefs, how can the theory describe the principles of moral justice? Second, is there a single, coherent analysis of "morally right" (or "moral justice")?

The first question can be answered by recalling the remarks by Jeffrey that decision theory cannot distinguish between the deliberations of a knave or a fool and the deliberations of a good and wise man. An

agent's notions of the desirabilities of the possible consequences are subjective in the sense that they reflect the agent's actual beliefs and preferences, irrespective of factual or moral justification. Being guided by decision theory is compatible with following policies and procedures which have vicious consequences. To say that an act accords with the principles of decision theory seems not to imply that it is in any way justified. Yet, to say that performing an action is fair is to imply that, so far, the action is justified. To say that an action is fair is to imply that there are good reasons, though perhaps not conclusive reasons, for performing the action.

Furthermore, it is usually argued that justice is only one species of morally right-making considerations (Frankena, 1962, p. 5) and that the principle of social utility is logically distinct from the principle of justice. The decision theorist appears committed to take a position very similar to that which a "naive" utilitarian would take. He is likely to use the total utility (or the average utility) as the only measure of the policy's desirability, where the total utility is an additive function of the utilities of all individuals, where each person's utilities are given identical weight. But it may happen that the total utility is maximized when many people are well off and a few are quite disadvantaged. The principle of total utility could well allow the disadvantages of a few people to be outweighed by the greater advantages of others. Whatever the moral status of the principle of total utility, the principle of justice (or fairness) is distinct from the principle of utility. The principle of justice would not allow the disadvantages of some to be outweighed by the greater advantages of others (Rawls, 1971b, pp. 80-99). Justice has to do, not so much with

the quantity of good or evil, as with the manner in which it is distributed (Frankena, 1962, p. 4; Frankena, 1973, p. 43; and Barry, 1965, pp. 43-44). Thus, it is pointed out that justice is not an additive (or an aggregative) principle, but that it is a distributive principle. Usually people express the distributive characteristic of fairness by saying that fairness requires that certain goods and evils be distributed equally to certain persons. But not any equal distribution is sufficient for fairness; the distribution has to respect the morally relevant features.

The decision-theorist is susceptible to prima facie criticism because we are not seeking a policy which maximizes the expected social utility, but a policy which is fair. It can turn out that a policy which maximizes the expected utility is not fair. Even if one could establish that a policy maximized the expected utility of the relevant parties, such a fact would not be sufficient to show that the policy treated people fairly. One needs to show that the policy brought about a certain kind of distribution. Petersen and Novick are quite mistaken, therefore, when they claim that there can be no distinction between maximizing expected utility and strategy fairness. They have given us no reason for believing a formal decision-theoretic approach should be used in reaching educational decisions. Since (formal) decision theory cannot distinguish between fair and unfair decisions, if one wants to be fair, he must look for guidance beyond decision theory. In order for the theory to be useful in providing moral guidance, the thoery needs to be supplemented with principles which make the distinctions between moral right and wrong and between fair and unfair.

Possible modifications. I propose now to show two ways in which the decision-theoretic position might be modified in order to become a guide for moral decision-making.

Let us consider the following case. A black applicant and a white applicant are equally qualified for entrance to medical school. It seems that fairness would require that equal treatment should be given to those with equal qualifications. It may be the case, however, that the social value of a black student becoming a doctor is greater than the social value of a white student becoming a doctor. Perhaps there is a high demand for black doctors, but there is only a small supply. The college admissions officer might decide, after considering these arguments, to choose the black applicant over the white applicant. The officer might defend his decision by pointing out that a greater social value is being pursued.

There is a difficulty here, however, for the officer has ignored certain probabilities in reaching his decision. In particular, suppose that it is the case that 90% of the black students flunk out of medical school, while 90% of the white students eventually succeed in medical school. It may well turn out, then, that selecting the white applicant eventually brings about larger expected utility than selecting the black applicant, and, therefore, that the admissions officer had been unfair to the white student, here, too. An extreme case would be the one where all of the black students fail, while all of the white students succeed. Should we say that the admissions officer has merely made an error in calculation? No. It seems that he has made a moral mistake, a mistake which is particularly offensive in the extreme case presented above. The admissions officer has violated the moral principle which requires

that an agent attend to the maturation of future utility in reaching his decisions.

Again, let us suppose that the black and the white applicant are equally qualified, and that the white student's chances of succeeding in medical school are 60%, while the black student's chances are 50%. One might be able to base these judgments of probability on reliable data about these kinds of students. The college admissions officer might decide, after considering these data, to choose the white applicant over the black applicant. The officer might defend his decision by pointing out that the white applicant is more likely than the black applicant to succeed in college.

There is a difficulty, however, for the officer has ignored certain utilities. Supposing the disutilities are the same, because the social need for black doctors is so much greater than the social need for white doctors, the expected utility for the black applicant is much larger than the expected utility for the white applicant. An extreme case would be the one where there are no jobs at all for white doctors. Should we say that the officer has made a mistake in calculation? No. It seems that he has made a moral mistake, that he may be guilty of moral myopia. For he does not care about what happens to the applicants or to society after the students finish college. Morality requires, however, that a person care about the consequences of his actions on others. A moral agent must attend to the total consequences of his actions in reaching his decisions. Thus, one might say that a moral decision-maker must be guided by the principle of total consequences.

Remember, decision theory holds that the agent's notions of the probabilities of the relevant circumstances and his notions of the

desirabilities of the possible consequences are subjective in the sense that they reflect the agent's actual beliefs and preferences, irrespective of factual or moral justification. The two examples given above, however, show that a moral decision-maker must be guided by the principle of the maturation of future utilities and the principle of total consequences. If a decision-maker fails to attend to such principles, then he is, so far, behaving immorally.

Novick and Ellis have suggested that the formal decision-theoretic procedure should be supplemented by certain substantive principles of justice. For example, they wrote that:

> The enhancement of the equality of (educational) opportunity is one social policy, which should be one major facet of society's utility function. Any selection act that tends to give a disadvantaged person an opportunity to overcome a disadvantage imposed by the circumstances of birth or social barriers will have higher social utility than the selection of any person for whom the utility components on all other facets are of identical value. (1977, p. 319)

They went on to say that:

> It is apparent that each person's overall utility for a particular outcome will depend on many facets of that outcome. Benefit provided the individual, the institution, and society at large may be matters of concern in any situation.

Thus, it should be recognized that although they recommend a formal decision theory, they are aware that the theory needs to be supplemented

by substantive principles. I hope they would accept my modifications. But clearly a more thorough and complete analysis of moral terms and concepts needs to be done. Of particular importance is the question about the role and status of consensus on utilities. As I've noted earlier, educational researchers place special emphasis on reaching consensus, as if consensus were sufficient and necessary for the moral rightness of a decision. Yet without specific safeguards, protections, and guarantees being an essential part of the decision process, it is not clear why consensus would be sufficient to establish moral rightness. (What if the participants are uninformed and irrational in their views?)

Nor is it clear why consensus on utilities is a necessary condition for a decision's being morally right. (Many important situations are characterized by conflicts of interest and value.) Many moral philosophers hold that the object of morality is to resolve such conflicts and disagreements. Kurt Baier has said that morality is the court of appeal for conflicts of interest (1965, pp. xvi, xix). John Rawls has written that justice is essentially concerned with the elimination of arbitrary distinctions and with the establishment, within the structure of a practice, of a proper balance between competing claims (1971a, p. 77). He has written that moral justice is the virtue of practices where there are assumed to be competing interests and conflicting claims and where it is supposed that persons will press their rights on each other (Rawls, 1971b, p. 134). The principles of justice are principles which justify ways of adjudicating such competing interests and conflicting claims. It is typical of cases of justice to involve persons who are pressing on one another their claims, between which a fair balance or equilibrium must be found (1971a, p. 83). J. L. Mackie has argued that

the function of morality is primarily to counteract the limitation of men's sympathies (1977, p. 108). According to Mackie, Protagoras, Hobbes, Hume, and Warnock are all at least broadly in agreement about the problem morality is needed to solve: limited resources and limited sympathies together generate both competition leading to conflict and an absence of what would be mutually beneficial cooperation (p. 111).

It seems, then, that moral philosophers may be able to provide the educational decision-maker with helpful formal and substantive principles of morality and justice. Yet there is much that is controversial here. Indeed, there is a reasonable doubt about whether there is a single, coherent definition of "morally right" (or "morally just"). For example, one noted moral philosopher, Richard Brandt, has argued that the important question about "morally right" is how should we define the concept of "morally right" itself?[4] Brandt went on to say that:

> There are two reasons for considering this issue. First, the terms "morally right," "morally obligatory," and so on, and rough synonyms of them in other languages, are in common use, and it would be clarifying to know what might helpfully be meant by them. (I argued in Chapter 1 that they do not have any definite meaning in ordinary use, so that the only serious question is what they might helpfully be employed to mean.) But second, these terms are not only in the language: they serve two highly important ends, that of communicating moral motivations to other persons, and that of mediating reflection which clarifies the individual's own attitudes towards concrete issues. These ends place a restriction on any artificial modification of the meaning or use of the expressions.

What meaning, in a broad sense, then, might "is morally wrong" most helpfully bear?

Brandt, in rejecting his earlier ideal observer theory of morality (1959), has argued that moral philosophers need to answer the following questions: "What is it rational to want, for itself?", "What is it rational for an agent to do, from his own point of view?", and finally, "What kind of moral system for his society would it be rational for an agent to support?" He has argued that the main traditional questions of moral philosophy can be satisfactorily rephrased in terms of these three questions. Brandt has presented reforming definitions for both "rationality" and "morally right," and he has provided reasons for adopting these definitions (pp. 10ff, 193ff).

It appears, then, that educational policy analysis and criticism must await a defensible semi-stipulative (or reformative) definition of "morally right." Surely this task is one which all educators must become aware of and attend to. When such a task is completed, we may well be in a position to supplement formal decision theory in order to enable the theory to distinguish between moral and immoral actions and decisions. Until this task is completed, reliance on decision theory is unlikely to be helpful. Educators should begin to determine the strength and limitations of various semi-stipulative definitions of "morally right."

V

Conclusion

In this essay I have been concerned with the important issues which are involved in the likely consensus among educational researchers that a formal decision theory should be used to determine whether an educational

policy is justified, and in particular, whether a selection procedure is fair. The position holds that decision theory adequately describes the principles of rational choice and the principles of moral choice.

In this essay I have argued that such reliance upon decision theory is unwarranted. In Section II, I have given a characterization of the features of the decision theory approach, and I have explained why more and more writers are coming to endorse, at least in part, the approach and drawn out the reservations some writers have to it. Next I have discussed two of the specific applications of the decision theory which have been recommended, and I have presented some criticisms of these applications. Sections III and IV dealt with the decision theory at a more general and abstract level. In Section III, I have argued that the formal decision theory cannot adequately describe or capture the principles of rationality. I have also argued that the complete resolution of these problems must await a defensible reformative or stipulative definition of "rationality," for the current use of the term is ambiguous. In Section IV, I have argued that the decision theory cannot adequately describe or capture the principles of moral justice (or fairness). I have also argued that the resolution of these problems must await a defensible reformative or stipulative definition of "moral justice," for the current use of the term is ambiguous. I have concluded by urging that those concerned with the criticism and evaluation of educational policy begin to investigate the strengths and limitations of various reformative (or stipulative) definitions.

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Footnotes

[1]The decision-theory approach has also been called utility-theory, cost-benefit analysis, maximizing expected utility, and the Bayesian model of choice.

[2]By "technical solution" Linn meant "a purely psychometric or mathematical solution."

[3]For further discussion of this conception in economic theory, see Tisdell, 1976.

[4]See also Singer, P., The triviality of the debate over "is-ought" and the definition of "moral," American Philosophical Quarterly, January 1973, 10(1).

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